

NASA TECH BRIEF

Marshall Space Flight Center



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Predicting Service Life Margins

A method has been developed for establishing hardware service life margins for equipment susceptible to malfunction due to excessive time or operation cycles, and for identifying limited life equipment so that monitoring and replacing can be accomplished before hardware failure.

All functional dynamic hardware, such as engines, gears, actuators, valves, springs, pumps, switches and certain electrical components, are susceptible to failure due to wear. Depending upon the type of hardware, excessive time or operation cycles will normally result in performance degradation or failure. Good practice generally requires replacing hardware that is suspected of approaching its design service life, particularly if its failure could result in personnel hazard, loss of ability to perform a critical function, or excessive cost.

The proposed method of establishing service life is considered applicable to any hardware where a design service life has been established and where a reasonably accurate prediction of expected usage

(time or cycles) can be made. The procedures and specifications used in developing the method may be obtained for use as guidelines in developing requirements for specific industrial and consumer items.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Code A&TS-TU
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No patent action is contemplated by NASA.

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MONITORING OF THE EARTH'S SURFACE

The Earth's surface is a complex and dynamic system. It is the interface between the atmosphere and the solid earth. The surface is composed of a variety of materials, including land, water, and ice. The surface is constantly changing, and its changes are reflected in the atmosphere and the solid earth. The surface is a key component of the Earth's climate system, and its monitoring is essential for understanding the Earth's climate and its changes.

The monitoring of the Earth's surface is a multi-disciplinary effort. It involves the use of a variety of techniques, including satellite remote sensing, ground-based observations, and modeling. The data collected from these techniques are used to study the Earth's surface and its changes. The data are also used to develop models of the Earth's surface and its changes. The models are used to predict the future of the Earth's surface and its changes.

The monitoring of the Earth's surface is a complex task. It requires the use of a variety of techniques and the collection of a large amount of data. The data are then analyzed and used to develop models of the Earth's surface and its changes. The models are used to predict the future of the Earth's surface and its changes. The monitoring of the Earth's surface is a key component of the Earth's climate system, and its monitoring is essential for understanding the Earth's climate and its changes.